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APPLICATION NO.	FILING OR 371(c) DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/767,542	01/23/2001	Amir Chaboki	1657.37US01	3023

24113 7590 06/12/2003

PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.  
4800 IDS CENTER  
80 SOUTH 8TH STREET  
MINNEAPOLIS, MN 55402-2100

EXAMINER

TUDOR, HAROLD JAY

ART UNIT

PAPER NUMBER

3641

DATE MAILED: 06/12/2003

PETITION NO : 13,135

To: Secretary, *Army*

The attached copy of a petition for modification or rescission of the Secrecy Order(s) is forwarded for recommendation by your office. In order to assure a timely response to the patent applicant on their petition, please respond within 30 DAYS of the above mail date.

*H. Katie Osline*

Enclosures as indicated:

Application

Exhibit

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Attorney Docket No.: 1657.37US01

Chaboki et al.

Application No.: 09/767,542

Examiner: L. Semunegus

Filed: January 23, 2001

Group Art Unit: 3641

For: TRANSVERSE PLASMA INJECTOR IGNITOR

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PETITION FOR RESCISSION OF A SECRECY ORDER

13,135  
Mail Stop LICENSING AND REVIEW  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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LICENSING & REVIEW

Sir:

In response to the Order of August 21, 2002, Applicant respectfully submits the following Petition for Rescission of a Secrecy Order pursuant to 37 C.F.R. 5.4 on the grounds that the order is ineffectual and futile.

The subject matter of the present application was developed under independent research and development funding and is not related to any contract between the Government and any of the principals.

The statutory grant for secrecy orders, contained at 35 USC 181, provides that an application can be kept secret and held from publication if deemed "detrimental to national security." The head of the agency that caused the order to be issued must establish the threat. *Id.* The agency responsible for this order was the United States Army.

Here, the publication of the application does not create a threat to national security. There is nothing in the application relating to performance. Furthermore, while the invention is clearly novel and non-obvious, it is not a "pioneering" invention. Thus, the Secrecy Order is futile and ineffectual when measured with regard to the scope of previously disclosed subject matter.

### BACKGROUND

The present invention, filed January 23, 2001, is a plasma injector disposed transverse to the central axis for use in munitions in which the central axis is occupied by a projectile. The invention was not developed under a government contract. Other than the current Secrecy Order, the inventors are unaware of any security regulations relating to the novelty of the present invention.

The application was examined and a Non-Final Rejection mailed April 22, 2002 and responded to by U.S. Mail on July 26, 2002 without any limitation on access. The secrecy order issued August 21, 2002, almost eighteen months after filing but before publication. Prior to that date, the application was handled by the inventors and assignee as "patent pending". A subsequent Non-Final Rejection was issued on April 29, 2003.

The Secrecy Order notes the application is NOT CLASSIFIED but CLASSIFIABLE as CONFIDENTIAL. The assignee, a defense contractor with a number of patents in this subject matter, is not aware of any regulations that require the subject matter to be "CLASSIFIABLE".

ARGUMENT

Applicant respectfully states that the above referenced Secrecy Order is futile and ineffectual in light of the multitude of published disclosures concerning plasma igniters for ETC gun applications. 37 C.F.R. 5.4. The imposition of a secrecy order is to prevent disclosure of subject matter detrimental to national security. Here, that disclosure has already occurred from prior patents, patent applications, publications, and Government sources. The specific novelty of this application, when viewed relative to the voluminous scope of the already disclosed subject matter, in no way creates a breach of national security.

The present application claims a munition in which one or more plasma injector modules are disposed in a channel within a filler material layer that substantially fills the stub case. The channel lies transverse to the central axis of the munition. This plasma ignition technique is appropriate for munitions in which a projectile has guiding fins that occupy the central region of the propellant chamber. The plasma injector modules are comprised of an anode, a cathode, a conductive wire and at least one aperture for egress of the plasma. The disposition of the modules within the channel allows for nearly simultaneous ignition of the propellant without the need for a central ignition guide.

While applicant provides a novel solution to this issue, and does not admit lack of novelty or obviousness, prior art exists with the basic structure of plasma injector igniters. As cited by the Examiner in the April 28, 2003 Office Action at Par. 8:

Brunet et al (U.S. Patent No. 6,237,494) disclose, in Fig. 5 a cartridge comprising a stub casing 18, a casing 16, and a plasma injector assembly comprising a plurality of plasma injectors, each injector comprises an anode, a cathode, a tube and a wire connecting the anode and the cathode, note Fig. 1. Each injector is aligned along a planar depth that is transverse to the central axis.

The Examiner cites Hershkowitz et al (U.S. Patent No. 5,675,115) at Par. 11 as teaching that apertures in the tube of the plasma injector module provide for uniform ignition. The Examiner also cites Ross (U.S. Patent No. 4,698,532) at par. 11 for disclosing a plasma injector having an axis that is transverse to the central axis of the munition. The above citations highlight the futility of blocking this disclosure in that the basic features of plasma injectors have previously been disclosed.

An analysis of the specific novelty of this invention further highlights the futility of the present secrecy order. The Examiner noted that the allowable subject matter, if rewritten in independent form to include all of the limitations of the base claims, simply involves the novel use of the filler material layer to create a channel for the tube and plasma injectors. Par.s 4, 15 and 16. The novel combination provided by this application over the prior art does not push the technology of a plasma injector into a new area of development. Rather, the use of a filler layer of insulating material to seat the plasma ignition system is an incremental, albeit unobvious, advance over the published art and does not create a national security risk.

In addition to previous publication of the key features, similar plasma ignition methods have recently been disclosed. The following two applications, which were filed in the United States after applicant, also directly address plasma ignition for munitions requiring a transverse plasma distribution due to the fin of a projectile in the propellant chamber. U.S. Patent Application No. 2003/0000412A1, filed June 27, 2002 and published January 2, 2003, discloses a design for ignition of a propellant when a fin stabilized sabot round extends within the combustion chamber. (Fig. 1) The preferred embodiment includes radial and axial channels to

ensure a propagation of the plasma over the complete powder chamber (Par. 0008) as compared to applicant's approach of distributing the plasma ignition modules.

U.S. Patent Application No. 2003/0005847A1, which was filed July 3, 2002 and published January 9, 2003, provides for an ignition device where a projectile penetrates deep within the propellant charge. (Par. 0013). In a first embodiment, the ignition means is electrically generated plasma. (Par. 0018). At least one plasma igniter is used with multiple axial diffuser tubes that extend through the propellant charge so that flame generated by ignition is evenly dispersed. (Par. 0054). These references both provide for plasma ignition of a propellant in which a projectile precludes the use of a central diffuser element and alternative means are required for simultaneous ignition. Clearly the imposition of this secrecy order is futile and ineffectual in that a publicly disclosed solution exists.

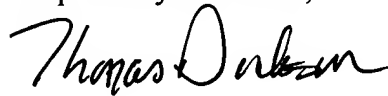
The Army itself has disclosed much of the information regarding this subject matter. With regards to performance, the September-October 1997 edition of *Armor* (p.31)(The professional journal of the United States Army's Armor and Cavalry branch) stated, "specially designed ammunition and ETC gun technology could be combined with conventional SP guns to further enhance performance of the latter up to 30% and beyond." Specifically, this improved performance is accomplished "by implementing a plasma regenerative injector and combustion control to the conventional combustion chamber." (p.32). Moreover, the Defense Technical Information Center (DTIC) provides access to seventeen unclassified reports for "plasma" and "igniters" (List attached)

In summary, the present order does nothing to alleviate national security concerns. The present subject matter is well documented, including designs for munitions in which the central

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axis is filled by a projectile. Based on the foregoing, applicant respectfully states that the secrecy order placed on the above referenced application is ineffectual and futile because of public disclosure of the field of the invention. Therefore, applicant requests rescission of the above referenced secrecy order.

Respectfully submitted,



Thomas G. Dickson  
Registration No. 51,616

Customer No. 24113  
Patterson, Thunte, Skaar & Christensen, P.A.  
4800 IDS Center  
80 South 8th Street  
Minneapolis, Minnesota 55402-2100  
Telephone: (612) 349-3004

CERTIFICATE OF TRANSMISSION

I hereby certify that this document is being transmitted via facsimile to: Assistant Commissioner for Patents, Washington, D.C. 20231 on

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Thomas G. Dickson  
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